

CLAIMS

1. A thermoplastic elastomer composition comprising an ethylene- α -olefinic copolymer (1) and a crystalline polyethylenic resin (2), wherein said crystalline polyethylenic resin (2) is in a three-dimensional network structure in a matrix comprising said ethylene- α -olefinic copolymer (1).
2. A thermoplastic elastomer composition according to Claim 1, wherein said ethylene- α -olefinic copolymer (1) is a ternary polymer containing a non-conjugated diene.
3. A thermoplastic elastomer composition according to Claim 2, wherein said ternary polymer has an iodine value of 40 or less.
4. A thermoplastic elastomer composition according to any one of Claims 1 to 3, wherein said crystalline polyethylenic resin (2) has a insoluble of 10 % by mass or more when dissolved in a boiling n-hexane.
5. A thermoplastic elastomer composition comprising as main components an ethylene- α -olefinic copolymer (1), a crystalline polyethylenic resin (2) and a block copolymer (3) described below, wherein said crystalline polyethylenic resin (2) and said block copolymer (3) are in a three-dimensional network structure in a matrix comprising said ethylene- α -olefinic copolymer (1),
in which said block copolymer (3) comprises a

crystalline ethylenic polymeric block and a block which is more compatible with said ethylene- α -olefinic copolymer (1) than with said crystalline polyethylenic resin (2).

6. A thermoplastic elastomer composition according to Claim 5 wherein said block copolymer (3) has said crystalline ethylenic polymeric blocks at its both ends.

Sub a²
7. A thermoplastic elastomer composition according to Claim 5 or 6 wherein said block copolymer (3) is obtained by hydrogenating a block copolymer whose blocks at its both ends are those represented by A shown below and whose intermediate block is that represented by B shown below, and wherein said A is present in an amount of 5 to 90 % by mass and said B is present in an amount of 10 to 95 % by mass based on 100 % by mass as the total of said A and said B, and wherein the 1,2-vinyl group content in said A is less than 25 % by mole and the 1,2-vinyl group content in said B is not less than 25 % by mole, and wherein at least 80 % of the all double bonds contained in said block copolymer (3) before the hydrogenation is saturated and the number average molecular weight is 50,000 to 700,000,

in which:

A: a butadiene polymeric block having a 1,2-vinyl group content lower than that in B shown below; and,

B: a conjugated diene polymeric block and/or a vinyl aromatic compound-conjugated diene random copolymeric

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block having a 1,2-vinyl group content higher than that in A shown above.

8. A thermoplastic elastomer composition according to Claim 7 comprising said ethylene- α -olefinic copolymer (1) in an amount of 10 to 94 % by mass, said crystalline polyethylenic resin (2) in an amount of 5 to 80 % by mass and a block copolymer (3) in an amount of 1 to 80 % by mass based on 100 % by mass as the total of said ethylene- α -olefinic copolymer (1), said crystalline polyethylenic resin (2) and said block copolymer (3).

9. A thermoplastic elastomer composition according to Claim 7 comprising a mineral oil-based softening agent in an amount of 200 parts by mass or less based on 100 parts by mass as the total of said ethylene- α -olefinic copolymer (1), said crystalline polyethylenic resin (2) and said block copolymer (3).

10. A foam whose main component is a thermoplastic elastomer composition comprising an ethylene- α -olefinic copolymer (1) and a crystalline polyethylenic resin (2), wherein said crystalline polyethylenic resin (2) is in a three-dimensional network structure in a matrix comprising said ethylene- α -olefinic copolymer (1).

11. A foam whose main component is a thermoplastic elastomer composition comprising as main components an ethylene- α -olefinic copolymer (1), a crystalline polyethylenic

resin (2) and a block copolymer (3) described below, wherein said crystalline polyethylenic resin (2) and said block copolymer (3) are in a three-dimensional network structure in a matrix comprising said ethylene- α -olefinic copolymer (1),

in which said block copolymer (3) comprises a crystalline ethylenic polymeric block and a block which is more compatible with said ethylene- α -olefinic copolymer (1) than with said crystalline polyethylenic resin (2).

12. A method for producing a foam comprising incorporating 0.01 to 20 parts by mass of a foaming agent to 100 parts by mass of a thermoplastic elastomer composition comprising an ethylene- α -olefinic copolymer (1) and a crystalline polyethylenic resin (2), wherein said crystalline polyethylenic resin (2) is in a three-dimensional network structure in a matrix comprising said ethylene- α -olefinic copolymer (1) followed by foaming.

13. A method for producing a foam comprising incorporating 0.01 to 20 parts by mass of a foaming agent to 100 parts by mass of a thermoplastic elastomer composition comprising as main components an ethylene- α -olefinic copolymer (1), a crystalline polyethylenic resin (2) and a block copolymer (3) described below, wherein said crystalline polyethylenic resin (2) and said block copolymer (3) are in a three-dimensional network structure in a matrix

comprising said ethylene- α -olefinic copolymer (1)
followed by foaming,

in which said block copolymer (3) comprises a crystalline ethylenic polymeric block and a block which is more compatible with said ethylene- α -olefinic copolymer (1) than with said crystalline polyethylenic resin (2).